

Contents

Letters to the Editor

- Oxygen abundances in halo stars as tests of galaxy formation
Matteucci, F., François, P. L1
- Detection of an intergalactic molecular complex?
Brouillet, N., Henkel, C., Baudry, A. L5
- Supernova 1987 A: the nebular loops and "Napoleon's Hat"
Wang, L., Wampler, E.J. L9
- First Earth-based observations of Neptune's satellite Proteus
Colas, F., Buil, C. L13
- Detection of a type-I X-ray burst from 4U 0614+09
Brandt, S., Castro-Tirado, A.J., Lund, N., Dremmin, V., Lapshov, I., Sunyaev, R. L15
- Non-coherent scattering in vertically extended Be star disks: winebottle-type emission-line profiles
Hummel, W., Dachs, J. L17
- X-ray clusters in open universes
Oukbir, J., Blanchard, A. L21
- Periodic outbursts in the peculiar X-ray binary 2S 0114+65
Finley, J.P., Belloni, T., Cassinelli, J.P. L25
- Continuum brightness of solar magnetic elements
Solanki, S.K., Brigljević, V. L29
- Faster formulations of the optimally localized averages method for helioseismic inversions
Pijpers, F.P., Thompson, M.J. L33
- A scenario for the selective depletion of stellar atmospheres
Waters, L.B.F.M., Trams, N.R., Waelkens, C. L37
- A search for TeV gamma rays from Cassiopeia gamma-1
Rannot, R.C., Sapru, M.L., Tickoo, A.K., Bhat, C.L., Kaul, R.K., Rawat, H.S., Senecha, V.K., Razdan, H. L41

Cosmology

- Molecules at early epochs. VI. A search for molecular hydrogen in the $z=3.391$ damped Lyman alpha system toward Q 0000-263
Levshakov, S.A., Chaffee, F.H., Foltz, C.B., Black, J.H. 385

- Analysis of X-ray galaxy clusters in the framework of modified Newtonian dynamics
Gerbal, D., Durret, F., Lachièze-Rey, M., Lima-Neto, G. 395
- A survey of very low redshift Mg II absorption systems in quasar spectra
Boissé, P., Boulade, O., Kunth, D., Tytler, D., Vigroux, L. 401

Extragalactic astronomy

- Images of the BL Lacertae object 1749+701 at 5 GHz
Báath, L.B., Zhang, F.J. 1
- (RN) A search for moderate redshift CO absorption
Douglas, N.G., Radford, S.J.E., Roland, J., Webb, J.K. 8
- (RN) Search for molecular gas in polar ring galaxies and the giant low surface brightness galaxy Malin 1
Radford, S.J.E. 13
- Monitoring of active galactic nuclei. I. The quasars 1302-102 and 1217+023
Jackson, N., O'Brien, P.T., Goad, M., Alloin, D., Axon, D.J., de Bruyn, A.G., Clavel, J., Dietrich, M., Gondhalekar, P.M., van Groningen, E., Kollatschny, W., Laurikainen, E., Lawrence, A., McHardy, I.M., Penston, M.V., Pérez, E., Pérez-Fournon, I., Robinson, A., Stirpe, G.M., Tadhunter, C.N., Terlevich, R.J., Wagner, S. 17
- Magnetic field, reconnection, and particle acceleration in extragalactic jets
Romanova, M.M., Lovelace, R.V.E. 26
- Time-resolved spectral analysis of three Seyfert galaxies observed with Ginga
Fiore, F., Perola, G.C., Matsuoka, M., Yamauchi, M., Piro, L. 37
- (RN) EXOSAT measurement of the spectrum of Markarian 382
Singh, K.P., Rao, A.R., Vahia, M.N. 49
- HCN in the center of the galaxy IC 342 (Plateau de Bure Series, Paper 4)
Downes, D., Radford, S.J.E., Guilloteau, S., Guélin, M., Greve, A., Morris, D. 424

HEXE observations of active galactic nuclei: constraints on pairs and Compton reflection

- Maisack, M., Kendziorra, E., Mony, B., Staubert, R., Doeberlein, S., Englhauser, J., Pietsch, W., Reppin, C., Trümper, J., Efremov, V., Kaniovsky, S., Kusnetsov, A., Sunyaev, R. 433

Galactic structure and dynamics

The role played by rotation and random motions in elliptical galaxies

- Busarello, G., Longo, G., Feoli, A. 52

Synchrotron modelling of the 400 pc spur at the galactic center

- Pohl, M., Reich, W., Schlickeiser, R. 441

On abundance gradients in spiral galaxies

- Götz, M., Köppen, J. 455

Stellar clusters and associations

Radial distribution of blue stragglers and surface brightness profile in the post-core-collapse globular cluster NGC 6397

- Lauzeral, C., Ortolani, S., Aurière, M., Melnick, J. 63

Formation, structure and evolution of stars

The r-process in the light of a microscopic model for nuclear masses

- Goriely, S., Arnould, M. 73

R Aquarii: an attempt at a unified model

- Burgarella, D., Vogel, M., Paresce, F. 83

Accreting white dwarf models for CAL 83, CAL 87 and other ultrasoft X-ray sources in the LMC

- van den Heuvel, E.P.J., Bhattacharya, D., Nomoto, K., Rappaport, S.A. 97

Identification of IRAS point sources in Scorpio-Centaurus-Lupus

- Carballo, R., Wesselius, P.R., Whittet, D.C.B. 106

Amplification of neutron star magnetic fields by thermoelectric effects. III. Growth limits in nonlinear calculations

- Wiebicke, H.-J., Geppert, U. 125

Non-equilibrium neutrino emissivities and opacities of neutron star matter

- Haensel, P. 131

The structure of the hot spots in 3C 295

- Taylor, G.B., Perley, R.A. 417

Near-infrared images of the Serpens cloud core: the stellar cluster

- Eiroa, C., Casali, M.M. 468

Mass-luminosity relation for Wolf-Rayet stars

- Beech, M., Mitalas, R. 483

(RN) The unusual nature of nova HR Delphini 1967

- Friedjung, M. 487

Stellar atmospheres

Multiwavelength observations of RV Tauri stars. I. AC Herculis

- Shenton, M., Albinson, J.S., Barrett, P., Davies, J.K., Evans, A., Goldsmith, M.J., Hutchinson, M.G., Maddison, R.C., Weight, A. 138

A spectroscopic investigation of η Carinae and the Homunculus Nebula. I. Overview of the spectra

- Hillier, D.J., Allen, D.A. 153

Chemical abundances in early B-type stars. IV. He, CNO, and Si abundances

- Kilian, J. 171

The FK Comae-type candidate 1E 1751+7046: *UBVR*I photometry

- Jetsu, L., Anttila, R., Dmitrienko, E., Grankin, K.N., Huovelin, J., Melnikov, S.Y., Shevchenko, V.S., Tuominen, I. 188

Chromospheres of late-type active and quiescent dwarfs. III. Variability of Ca II H emission profiles

- García López, R.J., Crivellari, L., Beckman, J.E., Rebolo, R. 195

An accelerated lambda iteration method for multilevel radiative transfer. II. Overlapping transitions with full continuum

- Rybicki, G.B., Hummer, D.G. 209

Light element abundances in barium stars

- Barbuy, B., Jorissen, A., Rossi, S.C.F., Arnould, M. 216

Interferometric observations of SiO $v=0$ thermal emission from evolved stars (*Plateau de Bure Series, Paper 2*)

- Lucas, R., Bujarrabal, V., Guilloteau, S., Bachiller, R., Baudry, A., Cernicharo, J., Delannoy, J., Forveille, T., Guélin, M., Radford, S.J.E. 491

Accelerated complete-linearization method for calculating NLTE model stellar atmospheres

- Hubeny, I., Lanz, T. 501

Radiation-driven winds of hot luminous stars. XI. Frictional heating in a multicomponent stellar wind plasma and decoupling of radiatively accelerated ions

- Springmann, U.W.E., Pauldrach, A.W.A. 515

Chromospheric heating in late-type dwarfs: acoustic or magnetic?

- Mathioudakis, M., Doyle, J.G. 523

Dynamic phenomena on the RS Canum Venaticorum binary II Pegasi in August 1989. II. An interpretation

- Doyle, J.G., van den Oord, G.H.J., Kellett, B.J. 533

Diffuse matter in space (including HII regions and planetary nebulae)

Herbig-Haro outflows associated with high-luminosity young stellar objects – AFGL 2591 and MWC 1080

- Poetzelt, R., Mundt, R., Ray, T.P. 229

The ($^{12}\text{CO}/^{13}\text{CO}$) ratio toward ζ Ophiuchi

- Wilson, T.L., Mauersberger, R., Langer, W.D., Glassgold, A.E., Wilson, R.W. 248

The distribution and nature of small-diameter radio sources along the southern galactic plane

- Whiteoak, J.B.Z. 251

Interactions of stars and interstellar matter in Scorpio Centaurus

de Geus, E.J. 258

Kinematics of disk planetary nebulae

Maciel, W.J., Dutra, C.M. 271

The self-consistent acceleration of cosmic rays in modified shocks with Bohm-type diffusion

Duffy, P. 281

A Herbig-Haro flow associated with the T Tauri star Bretz 4 in GGD 17

Carballo, R., Eiroa, C. 295

CRL 618: the nature of the 200 km s⁻¹ molecular outflow (Plateau de Bure Series, Paper 3)

Neri, R., Garcia-Burillo, S., Guélin, M., Cernicharo, J., Guilloteau, S., Lucas, R. 544

An analysis of intense OH maser emission in star-forming regions

Gray, M.D., Field, D., Doel, R.C. 555

Molecular hydrogen emission in Herbig-Haro complexes.

III. Outflows with jets

Zealey, W.J., Williams, P.M., Sandell, G., Taylor, K.N.R., Ray, T.P. 570

The Sun

Line polarization observed in chromospheric flares: calculations for electron impact excitation of H α

Aboudarham, J., Berrington, K., Callaway, J., Feautrier, N., Hénoux, J.C., Peach, G., Saraph, H.E. 302

Fluid motions in the solar atmosphere. III. A possible explanation of the downflows

Qing-Qi Cheng 581

Time evolution of arch filaments

Tsiropoula, G., Georgakilas, A.A., Alissandrakis, C.E., Mein, P. 587

Spectral analysis of a white-light flare

Sotirovski, P., Boyer, R., Hiei, E., Vince, I. 597

The solar system

Observations of mutual phenomena of the Galilean satellites of Jupiter made at the Observatoire de la Côte d'Azur

Froeschlé, M., Meyer, C., Mignard, F. 308

Radiation pressure forces of fluffy porous grains

Mukai, T., Ishimoto, H., Kozasa, T., Blum, J., Greenberg, J.M. 315

The identification problem in asteroid surveys

Kristensen, L.K. 606

Comparison of a 7000-year lunar ephemeris with analytical theory

Moshier, S.L. 613

Near-ultraviolet imaging of Jupiter's satellite Io with the Hubble Space Telescope

Paresce, F., Sartoretti, P., Albrecht, R., Barbieri, C., Blades, J.C., Boksenberg, A., Crane, P., Deharveng, J.M., Disney, M.J., Jakobsen, P., Kamperman, T.M., King, I.R., Macchetto, F., Mackay, C.D., Weigelt, G., Baxter, D., Greenfield, P., Jędrzejewski, R., Nota, A., Sparks, W.B. 617

Celestial mechanics and astrometry

Resonant asteroids and the equivalence principle

Plastino, A.R., Vucetich, H. 321

The determination of the precession rate of Mars from Phobos and Deimos observations

Sinclair, A.T., Morley, T.A. 326

Expected accuracy of the 1900–1990 Earth orientation parameters in the Hipparcos reference frame

Vondrák, J., Feissel, M., Essaïfi, N. 329

A quasi-global reduction method for astrolabe observations (Text in French)

Chollet, F., Najid, N.-E. 341

First meridian circle observations of Pluto

Morrison, L.V., Buontempo, M.E., Fabricius, C., Helmer, L. 347

Almucantar deformations in the method of equal altitudes

Pešek, I. 621

Physical and chemical processes

(RN) A note on the radial-azimuthal instability of an isothermal accretion disk around a black hole

Xinwu Cao 350

Instruments, data processing, and computational methods

Potential of long-baseline infrared interferometry for narrow-angle astrometry

Shao, M., Colavita, M.M. 353

Automatic strategies for astrophysical inverse problems

Thompson, A.M., Craig, I.J.D. 359

Image diameter-magnitude relations for stars on ESO/SERC R and J films

Hörtnagl, A.M., Kimeswenger, S., Weinberger, R. 369

The contribution of the lower atmospheric layers to the seeing at some mountain observatories

Gur'yanov, A.E., Kallistratova, M.A., Kutyrev, A.S., Petenko, I.V., Shcheglov, P.V., Tokovinin, A.A. 373

The IRAM interferometer on Plateau de Bure (Plateau de Bure Series, Paper 1)

Guilloteau, S., Delannoy, J., Downes, D., Greve, A., Guélin, M., Lucas, R., Morris, D., Radford, S.J.E., Wink, J., Cernicharo, J., Forveille, T., Garcia-Burillo, S., Neri, R., Blondel, J., Perrigouard, A., Plathner, D., Torres, M. 624

Interferometric measurement of tropospheric phase fluctuations at 86 GHz on antenna spacings of 24 m to 288 m (Plateau de Bure Series, Paper 5)

Olmi, L., Downes, D. 634

Abstracts of articles which have been published in A. & A. Suppl. Ser. 94, No. 1

Molecular opacities for solar and enhanced CNO abundances: relevance for accretion disks

Sharp, C.M. 382

High-frequency radio continuum observations of low-luminosity radio galaxies. I. A sample of sources with angular sizes $> 4'$

Gregorini, L., Klein, U., Parma, P., Schlickeiser, R., Wielebinski, R. 382

Simultaneous *UBVRI* photopolarimetric observations of blazars. II

Takalo, L.O., Sillanpää, A., Nilsson, K., Kidger, M., de Diego, J.A., Pirola, V. 382

Physical studies asteroids. XXIV. Phase relations for 48 asteroids obtained with the Carlsberg Meridian Circle

Lagerkvist, C.-I., Magnusson, P., Williams, I.P., Buontempo, M.E., Argyle, R.W., Morrison, L.V. 383

CCD observations in 7 open clusters: NGC 2421, NGC 2439, NGC 2489, NGC 2567, NGC 2627, NGC 2658 and NGC 2910

Ramsay, G., Pollacco, D.L. 383

The spectroscopic analysis of emission line galaxies identified from an objective prism survey

Winkler, H., Stirpe, G.M., Sekiguchi, K. 383

Variability and theoretical upper limit of the mass loss rate in OB-stars

Vilkoviskij, E.Y., Tambovtseva, L.V. 383

Ten years monitoring of extragalactic radio sources at 22, 37 and 87 GHz

Teräsraanta, H., Tornikoski, M., Valtaoja, E., Urpo, S., Nesterov, N., Lainela, M., Kotilainen, J., Wiren, S., Laine, S., Nilsson, K., Valtonen, M. 384

H α velocity fields and rotation curves of galaxies in clusters

Amram, P., Le Coarer, E., Marcellin, M., Balkowski, C., Sullivan III, W.T., Cayatte, V. 384

Papers accepted for publication in A. & A. 644

